

SECTION - A

1. Choose the set of numbers which is similar to the given set.

(81, 77, 69)

a. (92, 88, 79)

b. (56, 52, 44)

c. (64, 61, 53)

d. (75, 71, 60)

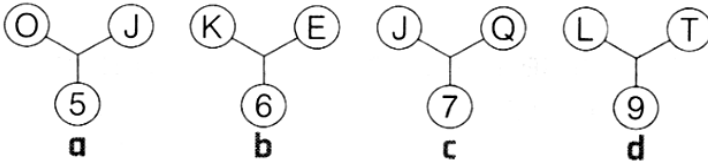
2. In the given series, find the next/missing term.

$\frac{a}{\sqrt{2}}, \frac{d}{2}, \frac{g}{2\sqrt{2}}, \frac{j}{4}, ?$

a. $\frac{n}{6}$
c. $\frac{n}{4\sqrt{2}}$

b. $\frac{m}{6}$
d. $\frac{m}{4\sqrt{2}}$

3. Choose the term which is different from others.



4. Start at one of the four corner letters and spiral clockwise round the perimeter, finishing at the centre letter to spell out a nine letters word.

?	C	E
I	?	R
S	T	I

The missing letter are

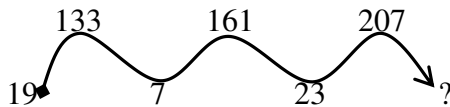
a. M and Y

b. N and Y

c. E and E

d. N and E

5. In the following questions, find the number that replaces the question mark.



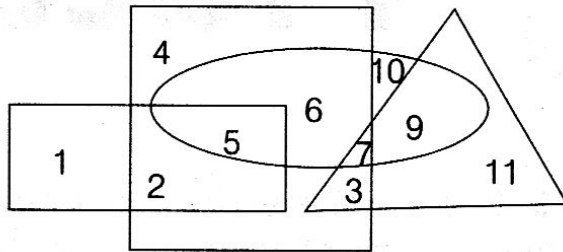
a. 7

b. 11

c. 9

d. 13

6. Five person standing in a queue. One of the two persons at the extremes is a professor and the other is a businessman. An advocate is standing to the right of a student, and author is the left of the businessman. The student is between the professor and the advocate. Counting from the left, the author is at place.
- Fourth
 - Third
 - Second
 - First
7. Raju on his scooter travels 5 km towards north, he then turns to his left and covers 10 km, he again turns to his left and covers 20 km. Finally he turns to his left and covers 10 km. How far is he from the starting point and in which direction?
- 15 km, South
 - 20 km, North
 - 15 km, North
 - 20 km, South
8. Ajay's birthday would be celebrated the day after tomorrow. Next week on the same day, the Sanjay's birthday would be celebrated. If today is the Friday, then what would be the day six days after Sanjay's birthday?
- Saturday
 - Sunday
 - Monday
 - Friday
9. Which number is in the square, ellipse and triangle?

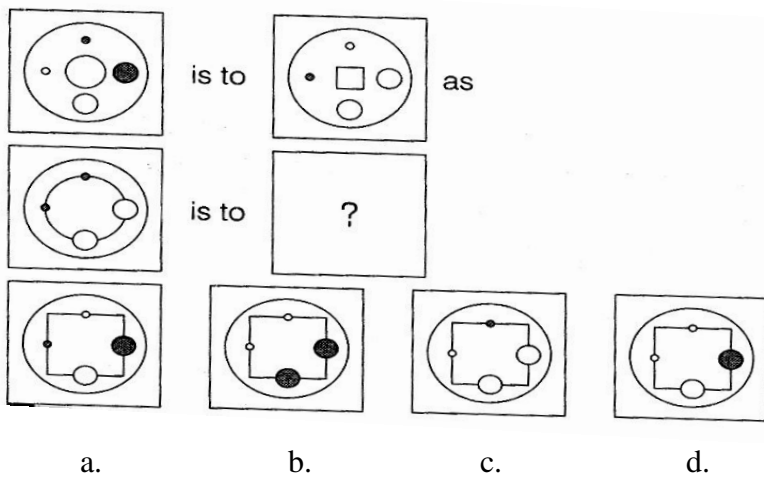


- 5
- 1
- 6
- 7

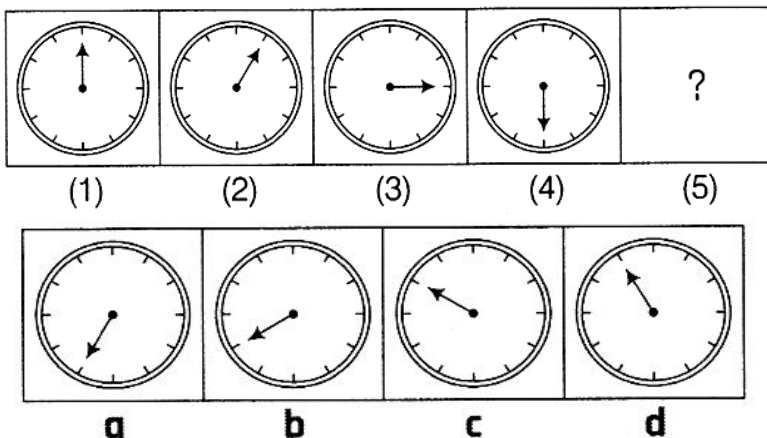
10. 'P - Q' means 'P is the mother of Q', 'P x Q' means 'P is the father of Q' and 'P + Q' means 'P is the daughter of Q'. Now, if M - N x T + Z, then which of the following is not true ?

- a. M is mother-in-law of Z
- b. T is N's daughter
- c. T is grand daughter of M
- d. N is wife of Z

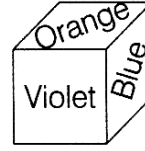
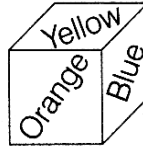
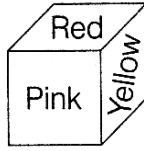
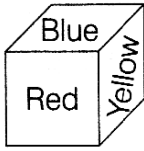
11. In the following questions, which shape completes the pattern of the second pair in the same way as the first pair ?



12. What comes next in the series given below?

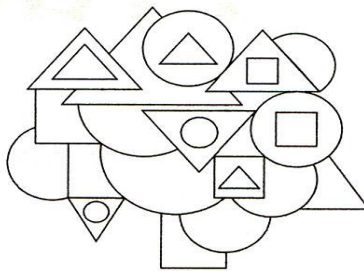


13. From the following positions of a die, decide which colour is opposite to yellow?



- a. Pink
 b. Violet
 c. Red
 d. Blue

14. Count the number of circles, triangle and squares in the given figure.



- a. 5 circles, 4 triangles and 3 squares
 b. 4 circles, 7 triangles and 3 squares
 c. 4 circles, 6 triangles and 4 squares
 d. None of the above

15. If the amount Rs. 1646 are distributed amongst x, y and z and money given to them is decreased by Rs. 32, Rs. 28 and Rs. 26, respectively, then they have money in the ratio of 9 : 11 : 6. What is the amount given to y?

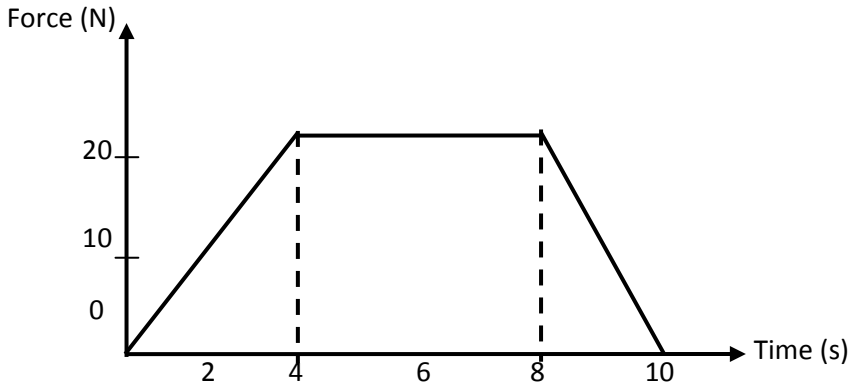
- a. Rs. 688
 b. Rs. 730
 c. Rs. 640
 d. Rs. 690

SECTION - B

16. For motion on a straight line path with constant acceleration, the ratio of the magnitude of the displacement to the distance covered is

- a. = 1
 b. ≥ 1
 c. $1 \leq$
 d. < 1

17. A body of mass 5 kg is acted on by a net force which varies as shown by the graph. The change in momentum obtained would be



- a. 10Ns
b. 100 Ns
c. 140 Ns
d. 200 Ns
18. A boy is whirling a stone tied with a string in a horizontal circular path. If the string breaks, the stone
- a. will continue to move in the circular path
b. will move along a straight line towards the centre of the circular path
c. will move along a straight line tangential to the circular path
d. will move along a straight line perpendicular to the circular path away from the boy.
19. In case of negative work, the angle between the force and displacement is
- a. 0°
b. 45°
c. 90°
d. 180°
20. Two identical bodies are allowed to fall different heights H_1 & H_2 . The ratio of their momentum when they reach the ground will be
- a. $H_1 : H_2$
b. $H_1^2 : H_2^2$
c. 1
d. $\sqrt{H_1} : \sqrt{H_2}$
21. The correct representation of 27°C in Kelvin is :
- a. 311°K
b. 311 k
c. 300 K
d. 320 Kelvin $^\circ\text{C}$

22. The solids, liquids and gases can be distinguished on the basis of following :

- a. Concentration
- b. Temperature
- c. Nature of the substances
- d. All of these

23. Choose the correct option from the following

Method of separation

Principle

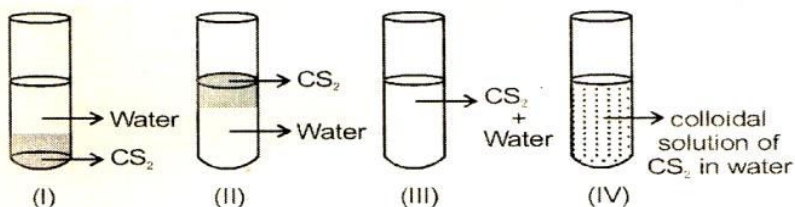
- | | |
|-------------------------------|---------------------------------------|
| A. Fractional crystallisation | (i) Difference in rate of adsorption |
| B. Fractional distillation | (ii) Difference in solubility |
| C. Chromatography | (iii) Difference in mass of particles |
| D. Centrifugation | (iv) Difference in Boiling point |

- a. A-ii, B-iv, C-iii, D-i
- b. A-ii, B-iv, C-i, D-iii
- c. A-iii, B-iv, C-i, D-ii
- d. A-iii, B-iv, C-i, D-ii

24. The mass of CO_2 gas released when 6.3 g of sodium carbonate is added to 15.0 g of acetic acid solution is (the mass of residue left is 18.0 g)

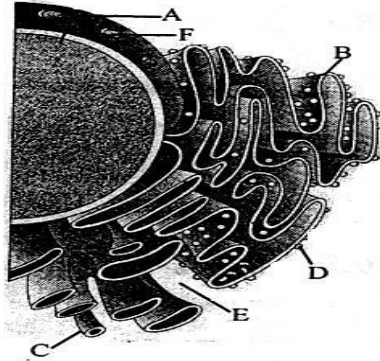
- a. 22.3 g
- b. 24.3 g
- c. 3.3 g
- d. None of these

25. When liquid carbon disulphide (CS_2) is added to water taken in a tube. Which is the correct observation ?



- a. IV
- b. III
- c. II
- d. I

26. Identify the components labeled A, B, C, D, E and F in the diagram below from the list (i) to (vi) given along with : -



Components

- | | | |
|----------------|------------------|---------------|
| (i) SER | (ii) Ribosome | (iii) Nucleus |
| (iv) Cytoplasm | (v) Nuclear pore | (vi) PER |

The correct components are

- | | A | B | C | D | E | F |
|----|-----|-----|----|----|----|-----|
| a. | v | i | vi | iv | ii | iii |
| b. | i | iii | ii | vi | v | iv |
| c. | iii | vi | i | ii | iv | v |
| d. | iii | I | ii | iv | v | iv |

27. Flesh of guava, apple, and pear fruits is gritty. It is due to :
- | | |
|---------------------------|---------------------------|
| a. Sclerenchyma fibres | b. Sclerenchyma sclereids |
| c. Collenchyma and lignin | d. (a) and (b) |
28. Which of these is/are function of epithelial tissue :
- | | |
|---------------|------------------------|
| a. Secretion | b. Covering and lining |
| c. Absorption | d. All of above |

29. Which of the following consist of smooth muscle tissue ?

- 1. Digestive tract
- 2. Arteries
- 3. Heart
- 4. Leg muscle

- a. Only 2
- b. Only 1
- c. 1 and 2
- d. 1 and 4

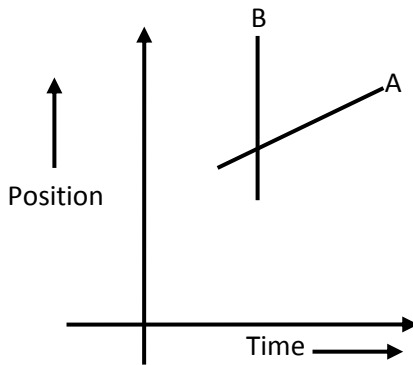
30. Different cells have different sizes. Arrange the following cells in an ascending order of their size and select the correct option

- (i) Mycoplasma
- (ii) Ostrich eggs
- (iii) Human RBCs
- (iv) Bacteria

- a. i)→(ii) →(iii)→(iv)
- b. (ii)→(i) →(iii)→(iv)
- c. (i)→(iv) →(iii)→(ii)
- d. (iii)→(ii) →(i)→(iv)

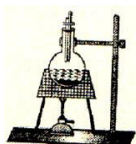
SECTION – C

31. The position – time graph for 2 objects A and B is shown. If V_A and V_B are velocities of objects A and B respectively. Then correct option is

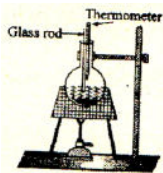


- a. $V_A = V_B$
- b. $V_A > V_B$
- c. $V_A < V_B$
- d. $V_A > V_B$ upto certain time after that $V_A < V_B$.

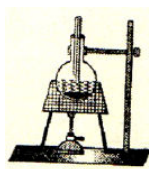
36. Which one of the following experimental arrangements is most appropriate for the determination of boiling point of water ?



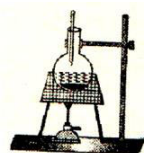
A



B



C



D

- a. D
c. B

- b. C
d. A

37. An atom of an element 'X' contains 29 electrons and 35 neutrons. The correct representation of the element 'X' will be

- a. ${}_{29}^{35}X$
c. ${}_{64}^{29}X$

- b. ${}_{29}^{64}X$
d. ${}_{35}^{64}X$

38. Choose the correct pair from the following

Mixtures

- A. Cream and Milk
B. Gun powder
C. Drugs from blood
D. Benzene and Toluene

Separation Methods

- (i) Chromatography
(ii) Fractional distillation
(iii) Centrifugation
(iv) Solvent extraction

- a. A-iii, B-ii, C-iv, D-i
b. A-iii, B-iv, C-i, D-ii

- b. A-iv, B-iii, C-ii, D-i
d. A-iii, B-iv, C-ii, D-i

39. Mass of potassium nitrate needed to make a saturated solution of it in 75g of water at 298 K. (Given solubility of KNO_3 is 62g at 298 K)

- a. 46.5 g
c. 12.0 g

- b. 82.6 g
d. 25 g

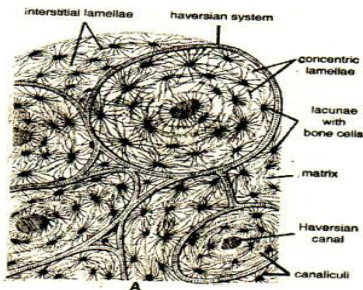
40. Which of the following characteristic of iron sulphide and mixture of iron filling and sulphur powder is correct ?

- a. Both are homogenous
- b. Both are heterogeneous
- c. A mixture of iron filling and sulphur powder may be heterogeneous or homogeneous but iron sulphide is always homogeneous.
- d. Iron sulphide is heterogeneous but the mixture of iron filling and sulphur powder is homogeneous.

41. In which one of the following, the genus name its two characters and its phylum are not correctly matched?

	<u>Genus name</u>	<u>Characters</u>	<u>Phylum</u>
1	Pila	(i) Body segmented (ii) Mouth with radula	Mollusca
2	Asterias	(i) Spiny skinned (ii) Water skinned Vascular system	Echinodermata
3	Sycon	(i) Pore bearing (ii) Canal system	Porifera
4	Periplaneta	(i) Jointed appendages (ii) Chitinous exoskeleton	Arthropoda

42. Given below is the diagram of tissue. Identify the type of tissue



- a. Bone
- b. Cartilage
- c. Bone
- d. Lymph

43. Match column-I with column – II and select the correct option from the codes given below:

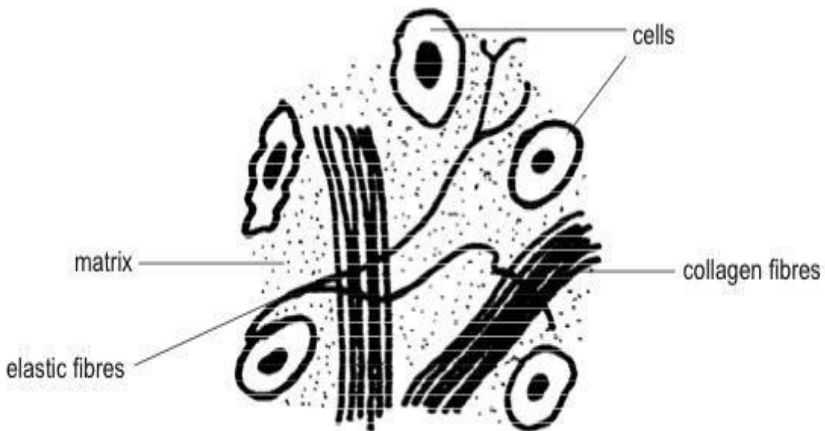
Column-I	Column-II
(A) Porifera	(i) Jointed appendages
(B) Annelida	(ii) Canal system
(C) Arthropoda	(iii) Water – Vascular system
(D) Echinodermata	(iv) Muscular phaynx

- a. A–(iii), B–(ii), C–(i), D–(iv) b. A–(iii), B–(iv), C–(ii), D–(i)
 c. A–(ii), B–(iv), C–(i), D–(iii) d. A–(ii), B–(i), C–(iv), D–(iii)

44. Nasal and genital tracts are lined by

- a. Simple columnar b. Pseudostratified epithelium
 c. Startified d. Startified cuboidal epithelium

45. Identify the following tissue.



- a. Areolar connective tissue
 b. Adipose connective tissue
 c. Fibrous connective tissue
 d. None of these